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U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards



**GUIDE FOR
THE USE OF INTERNATIONAL
SYSTEM OF UNITS (SI)
IN FEDERAL INFORMATION
PROCESSING STANDARDS
PUBLICATIONS**

Foreword

The Federal Information Processing Standards Publication Series of the National Bureau of Standards is the official publication relating to standards adopted and promulgated under the provisions of Public Law 89-306, and Part 6 of Title 15 Code of Federal Regulations. The entire series constitutes the FEDERAL INFORMATION PROCESSING STANDARDS REGISTER.

The series is used to announce Federal Information Processing Standards, and to provide standards information of general interest and an index of relevant standards publications and specifications. Publications that announce adoption of standards provide the necessary policy, administrative, and guidance information for effective standards implementation and use. The technical specifications of the standard are usually attached to the publication, otherwise a reference source is cited.

Comments covering Federal Information Processing Standards and Publications are welcomed, and should be addressed to the Associate Director for ADP Standards, Institute for Computer Sciences and Technology, National Bureau of Standards, Washington, D.C. 20234. Such comments will be either considered by NBS or forwarded to the responsible activity as appropriate.

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Abstract

The use of SI (International System of Units) within the United States is increasing. The Secretary of Commerce has established the policy that publications of the Department will provide dual-dimensions to the extent practicable.

The Federal Information Processing Standards (FIPS) Program in response to Public Law 89-306 (the Brooks Act) strives to improve the utilization of ADP equipment, goods and services within the Federal Government through the establishment of uniform Federal automatic data processing standards. These standards and guidelines which are published by the National Bureau of Standards as FIPS contain specifications which should be expressed as dual-dimensions. Accordingly, this guideline will be used in the preparation of all new FIPS PUBS and existing FIPS PUBS when revised.

Key words: ADP standards; computers; data processing, Federal Information Processing Standards; metric conversion; SI units; standards.

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Guide for the Use of International System of Units (SI) in Federal Information Processing Standards Publications

Federal Information Processing Publications are issued by the National Bureau of Standards pursuant to the Federal Property and Administrative Services Act of 1949 as amended, Public Law 89-306 (79 Stat. 1127), and as implemented by Executive Order 11717 (38 FR 12315, dated May 11, 1973), and Part 6 of Title 15 CFR (Code of Federal Regulations).

Explanation. The use of SI (International System of Units) within the United States is increasing. The Secretary of Commerce has established the policy that publications of the Department will provide dual-dimensions to the extent practicable.

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Measurements. All applicable FIPS PUBS that specify measurements will represent these as SI unit designations as prescribed in the current version of American National Standard Metric Practice Guide (Z210.1). The SI unit designations will be followed by the equivalent "English" notation in parenthesis. Also values which are converted or rounded will be in accordance with the rules specified in the Guide. The use of the dual dimensions notation; i.e., metric (English) shall be the practice in future FIPS PUBS.

The following is an example of how measurement units are to be expressed in dual dimension notation:

"Size. The rectangles are dimensioned as follows:

outer

height: 3.20 mm (0.126 in)

length: 1.42 mm (0.056 in)

inner

height: 3.14 mm (0.124 in)

length: 1.37 mm (0.054 in)"

Spelling of SI and Associated Units. The spelling of the names of the SI units will be as prescribed in the current version of International Standard 1000, SI Units and Recommendations for Use of Their Multiples and of Certain Other Units. Accordingly the following two units are spelled as follows: "metre" and "litre."

Symbols for Units. When unit symbols are used these will be in accordance with the current version of American National Standard (Y10.19) Letter Symbols for Units Used in Science and Technology.

Separators and Decimal Point. A practice in parts of Europe is to use a comma (,) as a decimal marker while the practice in North America, and some other countries is to use a period(.) as the decimal point. To avoid confusion because of these differing practices, spaces should be used instead of commas where it is necessary to separate long strings of digits; e.g., 1 573 456.22 instead of 1,573,456.22. The period is used as a decimal point.

Where to Obtain Copies of the Standard.

- a. Copies of this FIPS publication are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402: SD Catalog Number C13.52:34. There is a 25 percent discount on quantities of 100 or more. When ordering, specify document number, title, and SD catalog number. Payment may be made by check, money order, coupons, or deposit account.
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- c. Those involved in the preparation of Federal Information Processing Standards publications may reference or obtain copies of the applicable International or American National Standards from the Office of ADP Standards Management, Institute for Computer Sciences and Technology, National Bureau of Standards.

Effective Date. The provisions of this Guide become effective upon the date of publication.

Approving Authority. Associate Director for ADP Standards, Institute for Computer Sciences and Technology, National Bureau of Standards.

